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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,593	11/20/2001	Shigenobu Maeda	50099-180	8927

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EXAMINER

PHAM, THANH V

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/988,593

Applicant(s)

MAEDA ET AL.

Examiner

Thanh V Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 12-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I (claims 1-11) in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The disclosure is objected to because of the following informalities: on page 21, line 3, resist film "142" should be --143--; line 10, "potion" should be --portion--.  
  
Appropriate correction is required.
4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
5. Claim 10 is objected to because of the following informalities: "includes an isolation film" seems to be redundant. Appropriate correction is required.

***Drawings***

6. Figures 33-36 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The "prescribed element" is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). It is suggested that the limitation of claim 6 is recited after the above quoted terms to make enable the claimed invention then claim 6 could be deleted.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said semiconductor region" in lines 14 and 15. There is insufficient antecedent basis for this limitation in the claim. It is suggested that --first conductivity type-- is inserted after "said" to make clear what "semiconductor region" is.

Claim 1, line 10 also recites "at least one said element forming region" which is not clear. It is suggested that --at least one of said *plurality* element forming regions-- replaces the above quoted terms.

### ***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

12. *Assuming the claims are understood as the suggestion stated in the above objection and rejection*, claims 1-9 and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Flaker et al. U.S. Patent No. 6,410,369 B1.

The Flaker et al. reference, in its abstract and the detailed description, discloses a semiconductor device having an SOI structure formed by a semiconductor substrate, an embedded insulating layer 48 and an SOI layer 46, comprising: a plurality of element forming regions, each formed with different elements (fig.'s 8 and 10); an isolation film 40 (fig. 10B) provided in an upper layer part of said SOI layer for isolating said plurality of element forming regions from each other; a first

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conductivity semiconductor region (*body link, fig. 10B*) provided under said isolation film 40 as part of said SOI layer, said *first conductivity* semiconductor region being formed in contact with at least one of said *plurality* element forming regions having a first conductivity type among said plurality of element forming regions; and a first conductivity type body region <sup><10></sup> provided in said SOI layer and capable of being externally fixed in electric potential (fig. 8), said body region being in contact with said *first conductivity* semiconductor region, wherein said *first conductivity* semiconductor region at least partially has a first conductivity type impurity region not mixed with an impurity of a second conductivity type different from said first conductivity type but doped by only an impurity of said first conductivity type, and said *first conductivity* semiconductor region is formed in a region reaching said at least one element forming region from said body region (fig. 8). Said second conductivity type impurity-free region include a region having a larger thickness than the remaining region in said isolation film (fig. 19). With respect to claims 7-9, there are regions on the wafer of the reference that are not active regions and could therefore be labeled as "dummy regions".

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flaker et al. U.S. Patent No. 6,410,369 B1 in combination with the following reasons.

The Flaker et al. reference discloses all of the structure of the instant claimed invention as stated in the 102 rejection above but lacks the dummy region and the thickness of the isolation film.

In re claim 10, choice of 50 nm for the isolation film to achieve particular device properties would have been a matter of routine optimization because such thickness is known to affect the device properties and would depend on the desired device density on the finished wafer and the desired device characteristics.

In re claims 7-9, if the dummy regions are not inherently formed, the examiner takes official notice that, in the semiconductor manufacturing, not all of the elements formed on a wafer are used; therefore, whichever is not used is converted to dummy element wherein its formation bears the same structure of the others.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply 50 nm for the thickness of the isolation film and convert the unused element to be dummy into the structure of Flaker et al. as the thickness and the dummy element would have been implied to improve the device structure in accordance with the teaching of the Flaker et al. reference.

**Conclusion**

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh V Pham whose telephone number is 703-308-2543. The examiner can normally be reached on M-T (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 (7724, 3431 and 3432) for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TvP  
December 4, 2002

  
Olik Chaudhuri  
Supervisory Patent Examiner  
Technology Center 2800